14.8: 5, 7.

$a=1$
$b=4$
$f(x)=\frac{1}{x^2}$

5.) $\int_1^4 \frac{dx}{x^2}$, Simpson's Rule, $n=4$.

$\int_a^b f(x)\,dx \approx \frac{h}{3}[f(a)+4f(a+h)+2f(a+2h)+\cdots+f(b)]$. $h=\frac{4-1}{4}=\frac{3}{4}$.

$\int_1^4 \frac{1}{x^2}\,dx \approx \frac{\frac{3}{4}}{3}[f(1)+4f(1+\frac{3}{4})+2f(1+2\cdot\frac{3}{4})+4f(1+3\cdot\frac{3}{4})+f(4)]$

$=\frac{1}{4}[f(1)+4f(\frac{7}{4})+2f(\frac{10}{4})+4f(\frac{13}{4})+f(4)]$

$=\frac{1}{4}[\frac{1}{1^2}+4\frac{1}{(7/4)^2}+2\frac{1}{(10/4)^2}+4\frac{1}{(13/4)^2}+\frac{1}{4^2}]$

$=\frac{1}{4}(3.067)=\boxed{0.7668}$

$a=0$ $f(x)=\frac{x}{x+1}$
$b=2$ $h=\frac{2-0}{4}=\frac{1}{2}$

7.) $\int_0^2 \frac{x}{x+1}\,dx$, Trap. Rule, $n=4$.

$\int_a^b f(x)\,dx \approx \frac{h}{2}[f(a)+2f(a+h)+2f(a+2h)+2f(a+3h)+\cdots+f(b)]$

$\int_0^2 \frac{x}{x+1}\,dx \approx \frac{\frac{1}{2}}{2}[f(0)+2f(0+\frac{1}{2})+2f(0+2\cdot\frac{1}{2})+2f(0+3\cdot\frac{1}{2})+f(2)]$

$=\frac{1}{4}[f(0)+2f(\frac{1}{2})+2f(1)+2f(\frac{3}{2})+f(2)]$

$=\frac{1}{4}[\frac{0}{0+1}+2\frac{\frac{1}{2}}{\frac{1}{2}+1}+2\frac{1}{1+1}+2\frac{\frac{3}{2}}{\frac{3}{2}+1}+\frac{2}{2+1}]$

$=\frac{1}{4}[\frac{1}{\frac{1}{2}+1}+1+\frac{3}{\frac{3}{2}+1}+\frac{2}{3}]=\boxed{0.883}$